

Amendments to the Claims:

This listing of claims will replace all prior listings of claims in the application.

Listing Of Claims:

Claim 1 (**currently amended**). A zoom lens in/from which a magnification changing optical unit for changing an overall focal length of said zoom lens can be inserted/removed, characterized in that

a wobbling unit which can be amplitude-driven in an optical axis direction to detect a best imaging position is placed closer to an image side than an insertion position of said magnification changing optical unit and

a light amount adjustment stop is placed closer to the object side than said magnification changing optical unit.

Claim 2 (**original**). A lens according to claim 1, wherein said zoom lens sequentially includes, from an object side, a first unit which is fixed in magnification changing operation and has a positive refractive power, a second unit which moves in the optical axis direction in magnification changing operation and has a negative refractive power, a third unit for correcting an image plane fluctuation accompanying magnification changing operation, and a fourth unit having a positive refractive power for imaging, and a magnification changing optical unit which changes the overall focal length of said zoom lens can be inserted/removed in/from said fourth unit.

Claims 3-11 (**cancelled**).

Claim 12 (**previously amended**). A photographing system comprising said zoom lens defined in claim 1 and a camera on which said zoom lens is mounted.

Claims 13 and 14 (**cancelled**).

Claim 15 (**previously amended**). A lens according to claim 16, wherein when said wobbling unit is placed in said fourth unit amplitude-driven to make an amplitude halfwidth of a backfocus change amount become 1/2 a depth of focus,

$$|\alpha_2(S_2 - E_2)/f_{w2}| < 2.2$$

is satisfied, where α_2 is an angle of an off-axis principal ray incident on the object-side principal plane of said wobbling unit (with insertion of said magnification changing optical unit), S_2 is a distance to the stop viewed from the object-side principal plane of said wobbling unit (with insertion of said magnification changing optical unit), E_2 is a distance to the image pickup plane viewed from the image-side principal plane of said wobbling unit (with insertion of said magnification changing optical unit), and fw_2 is a focal length at the wide-angle end with insertion of said magnification changing optical unit.

Claim 16 (**currently amended**). A zoom lens sequentially comprising, from an object side:

- a first unit which is fixed in magnification changing operation and has a positive refractive power;

- a second unit which moves in the optical axis direction in magnification changing operation and has a negative refractive power;

- a third unit for correcting an image plane fluctuation accompanying magnification changing operation;

- a fourth unit having a positive refractive power for imaging;

- a magnification changing optical unit which changes the overall focal length of said zoom lens can be inserted/removed in/from said fourth unit; and

- a wobbling unit which can be amplitude-driven in an optical axis direction to detect a best imaging position is placed closer to an image side than an insertion position of said magnification changing optical unit,

wherein a light amount adjustment stop is placed closer to the object side than said ~~fourth unit~~ magnification changing optical unit, and wherein when said wobbling unit is placed in said fourth unit and amplitude-driven to make an amplitude halfwidth of a backfocus change amount become $1/2$ a depth of focus,

$$|\alpha_1(S_1 - E_1)/fw_1| < 0.6$$

is satisfied, where α_1 is an angle of an off-axis principal ray incident on an object-side principal plane of said wobbling unit (without insertion of said magnification changing

optical unit), S1 is a distance to a said stop viewed from the object-side principal plane of said wobbling unit (without insertion of said magnification changing optical unit), E1 is a distance to an image pickup plane viewed from an image-side principal plane of said wobbling unit (without insertion of said magnification changing optical unit), and fw1 is a focal length at a wide-angle end without insertion of said magnification changing optical unit.

Claim 17 (**previously presented**). A lens according to claim 16, wherein in said fourth unit,

$$-0.001 < \phi 4b/Im < 0.0015$$

is satisfied, where $\phi 4b$ is a refractive power of a lens unit located immediately before said wobbling unit in said fourth unit, and Im is an image size of an image pickup element.

Claim 18 (**previously presented**). A lens according to claim 16, wherein said wobbling unit is placed closest to the image side in said fourth unit.

Claim 19 (**previously presented**). A lens according to claim 16, wherein part of said fourth unit is retracted on the optical axis by inserting said magnification changing optical unit.

Claim 20 (**previously presented**). A lens according to claim 16, wherein an optical system for macro photographing and flange-back adjustment is placed closer to the image side than said wobbling unit in said fourth unit, and said optical system can integrally move in macro photographing and flange-back adjustment.

Claim 21 (**previously presented**). A lens according to claim 16, wherein an optical system for macro photographing and flange-back adjustment is placed closer to the image side than said wobbling unit in said fourth unit, and said optical system comprises a lens unit fixed in macro photographing and flange-back adjustment and a lens unit which can move in macro photographing and flange-back adjustment.

Claim 22 (**previously presented**). A lens according to claim 16, wherein an amplitude halfwidth of the wobbling unit before/after insertion of said magnification changing optical unit is

$$\Delta x_2 = F \cdot \Delta x_1$$

where Δx_1 is an amplitude halfwidth of the wobbling unit before insertion of the magnification changing optical unit, Δx_2 is an amplitude halfwidth of the wobbling unit after insertion of the magnification changing optical unit, and F is a rate of change of F-number due to insertion/removal of the magnification changing optical unit.

Claim 23 (previously presented). A photographing system comprising said zoom lens defined in claim 16, and a camera on which said zoom lens is mounted.

Claim 24 (currently amended). A zoom lens sequentially comprising, from an object side:

a first unit which is fixed in magnification changing operation and has a positive refractive power;

a second unit which moves in the optical axis direction in magnification changing operation and has a negative refractive power;

a third unit for correcting an image plane fluctuation accompanying magnification changing operation;

a fourth unit having a positive refractive power for imaging;

a magnification changing optical unit which changes the overall focal length of said zoom lens can be inserted/removed in/from said fourth unit; and
a wobbling unit which can be amplitude-driven in an optical axis direction to detect a best imaging position is placed closer to an image side than an insertion position of said magnification changing optical unit,

wherein a light amount adjustment stop is placed closer to the object side than said fourth unit magnification changing optical unit, and wherein when said wobbling unit is placed in said fourth unit amplitude-driven to make an amplitude halfwidth of a backfocus change amount become 1/2 a depth of focus,

$$|\alpha_2(S_2 - E_2)/f_{w2}| < 2.2$$

is satisfied, where α_2 is an angle of an off-axis principal ray incident on the object-side principal plane of said wobbling unit (with insertion of said magnification changing optical unit), S_2 is a distance to the stop viewed from the object-side principal plane of said

wobbling unit (with insertion of said magnification changing optical unit), E2 is a distance to the image pickup plane viewed from the image-side principal plane of said wobbling unit (with insertion of said magnification changing optical unit), and fw2 is a focal length at the wide-angle end with insertion of said magnification changing optical unit.

Claim 25 (**previously presented**). A lens according to claim 24, wherein in said fourth unit,

$$-0.001 < \phi_{4b}/l_m < 0.0015$$

is satisfied, where ϕ_{4b} is a refractive power of a lens unit located immediately before said wobbling unit in said fourth unit, and l_m is an image size of an image pickup element.

Claim 26 (**previously presented**). A lens according to claim 24, wherein said wobbling unit is placed closest to the image side in said fourth unit.

Claim 27 (**previously presented**). A lens according to claim 24, wherein part of said fourth unit is retracted on the optical axis by inserting said magnification changing optical unit.

Claim 28 (**previously presented**). A lens according to claim 24, wherein an optical system for macro photographing and flange-back adjustment is placed closer to the image side than said wobbling unit in said fourth unit, and said optical system can integrally move in macro photographing and flange-back adjustment.

Claim 29 (**previously presented**). A lens according to claim 24, wherein an optical system for macro photographing and flange-back adjustment is placed closer to the image side than said wobbling unit in said fourth unit, and said optical system comprises a lens unit fixed in macro photographing and flange-back adjustment and a lens unit which can move in macro photographing and flange-back adjustment.

Claim 30 (**previously presented**). A lens according to claim 24, wherein an amplitude halfwidth of the wobbling unit before/after insertion of said magnification changing optical unit is

$$\Delta x_2 = F \cdot \Delta x_1$$

where Δx_1 is an amplitude halfwidth of the wobbling unit before insertion of the magnification changing optical unit, Δx_2 is an amplitude halfwidth of the wobbling unit after insertion of the magnification changing optical unit, and F is a rate of change of F-number due to insertion/removal of the magnification changing optical unit.

Claim 31 (**previously presented**). A photographing system comprising said zoom lens defined in claim 24, and a camera on which said zoom lens is mounted.